

The Battle of the Neighbourhoods

Introduction

With about 8.5 million people calling the city home, NYC remains one of the fastest growing cities in the world. Its demographics include a variety of diverse cultures & cuisines. This essentially means that whatever type of food you love, there is still hope for you in NYC. This report will try to analyse the data publicly available for NYC & try to answer the following questions:

- Which parts of NYC have the most Japanese restaurants?
- Which is the best location in NYC for Japanese cuisine?
- Which areas have a dearth of Japanese restaurants?
- What would be the best place to stay in NYC if you're in love with sushi?

This analysis will help fellow sushi lovers to find their favourite place in the great city of New York. It might also help any individual(s) or companies looking to open a Japanese restaurant in the city.

Data Required/Used

The following datasets will be used for this analysis:

- NYC location dataset
 - Source: https://cocl.us/new_york_dataset
 - Dataset includes names of neighbourhoods, boroughs & their respective location coordinates.
- Japanese restaurants location & info
 - Source: Foursquare API
 - The API will be used to search for Japanese restaurants in NYC's neighbourhoods.
- Boundary Data
 - Source: : <https://data.cityofnewyork.us/City-Government/BoroughBoundaries/tqmj-j8zm>
 - This boundary data for the boroughs will help us plot the choropleth map of NYC.

Methodology

Keeping in mind the main aim of this project/analysis, we start by fetching the dataset from the URL mentioned above. In order to explore the data, we first try to make sense of a sample from it. We find out that the dataset lists a total of 306 neighbourhoods along with the borough they belong to & their respective latitudes & longitudes.

```
new_york_data=get_new_york_data()
new_york_data.sample(5)
```

	Borough	Neighborhood	Latitude	Longitude
72	Brooklyn	East New York	40.669926	-73.880699
95	Brooklyn	East Williamsburg	40.708492	-73.938858
198	Staten Island	New Brighton	40.640615	-74.087017
139	Queens	Long Island City	40.750217	-73.939202
21	Bronx	Mott Haven	40.806239	-73.916100

```
print(f"Dataset has {new_york_data.shape[0]} neighbourhoods.")
```

Dataset has 306 neighbourhoods.

To continue with our analysis, we get a list of all the Japanese restaurants in NYC from the Foursquare API. This step gives us a dataset which looks something like this.

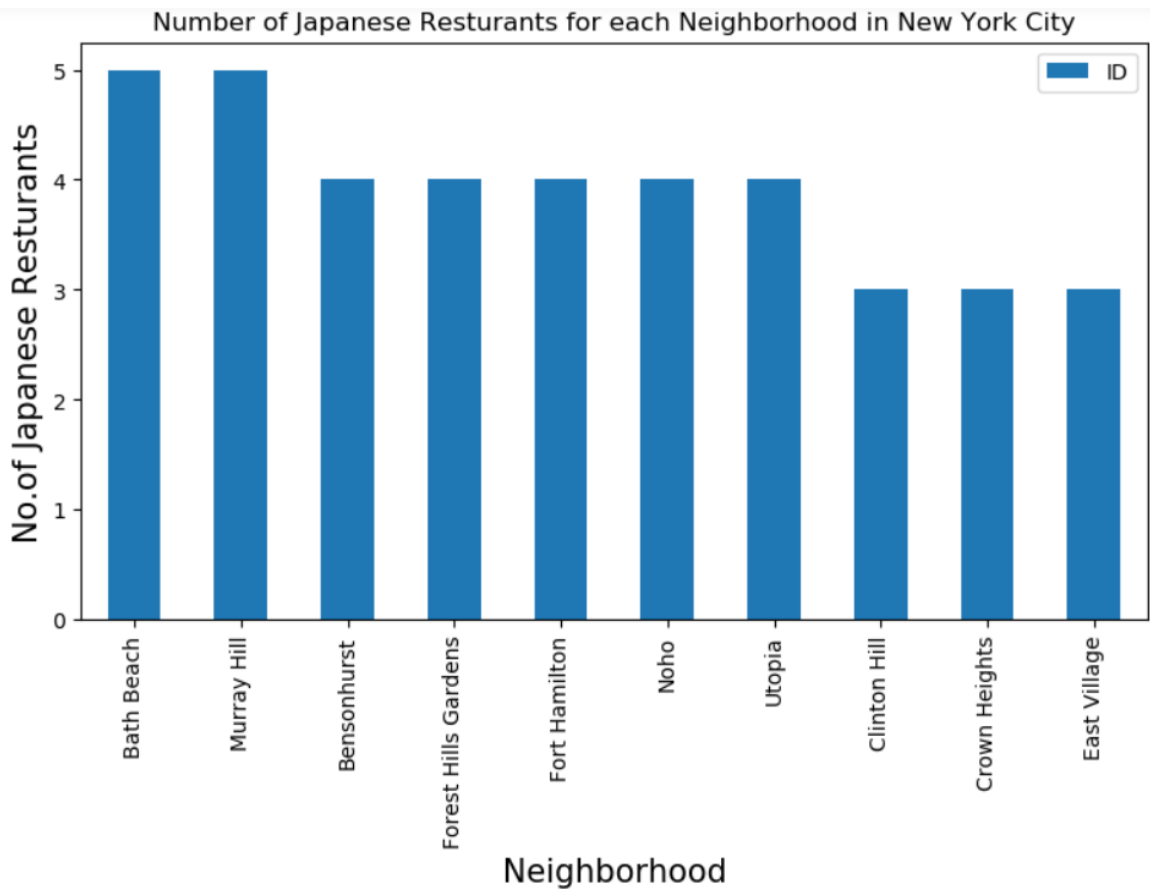
```
# Getting a taste of the data
japanese_rst_ny.sample(5)
```

	Borough	Neighborhood	ID	Name
92	Queens	Long Island City	5a22f5b8d41bb773bfc3f5c3	Suzuki Shokudo
8	Bronx	Castle Hill	54e0efc3498e7eda5dff1847	Sarku
151	Queens	Utopia	4d7926de930ef04da310c24f	Tokyo Hibachi Steak House & Sushi
38	Brooklyn	Bath Beach	513e7ec8e4b07f4fa1b53b3d	Fuki Sushi Japanese Restaurant
13	Brooklyn	Bensonhurst	4c326b9fa0ced13ac126156e	Ichi Sushi

```
print(f"Found {japanese_rst_ny.shape[0]} Japanese restaurants in NYC.")
```

Found 171 Japanese restaurants in NYC.

We find ourselves with 171 Japanese restaurants in the City of New York across all neighbourhoods & boroughs. Further, we visualize the data Borough-wise & Neighbourhood-wise.



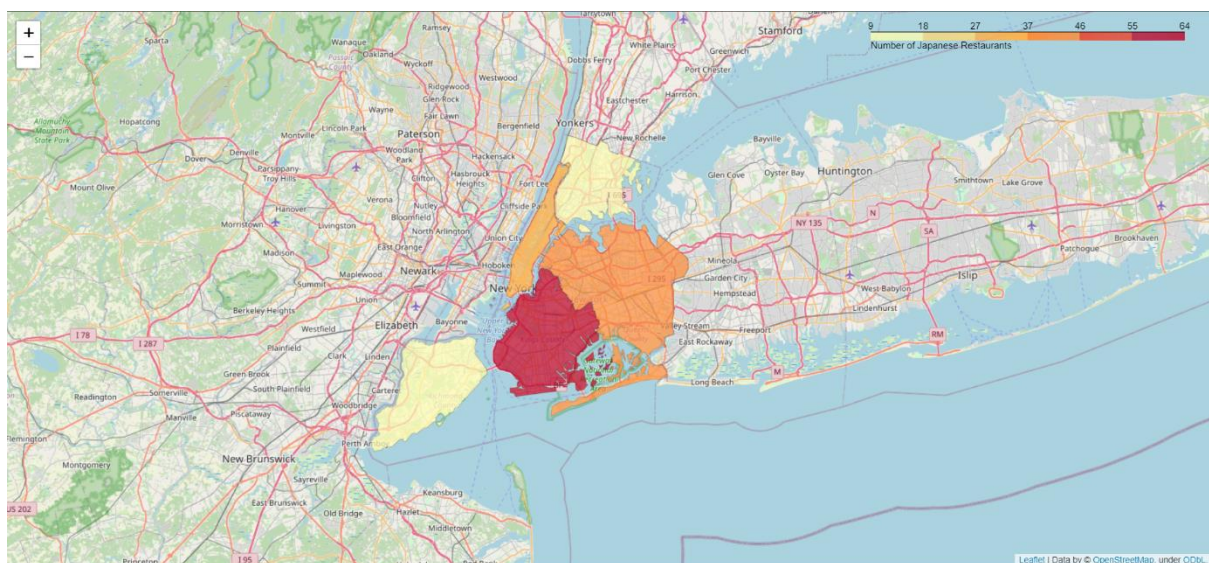
We find that Brooklyn of all places has the most Japanese restaurants, followed by Queens & then the Manhattan Island. All of Bronx really doesn't have that many Japanese restaurants.

It also looks like the Bath Beach & the Murray Hill neighbourhoods tie out for the first place at 5 Japanese restaurants each.

Finally, lets visualize this borough-wise data through a choropleth map. We download the borough boundaries data (.geojson file) from the URL listed in the Dataset(s) section and feed it to the Folium module along with the dataset with borough-wise counts of restaurants.

	Borough	ID
0	Bronx	9
1	Brooklyn	64
2	Manhattan	36
3	Queens	45
4	Staten Island	17

The final map is given below.



Results & Discussion

We should now be able to answer the questions that we posed in the Business Problem section. We can confidently say that Brooklyn has the largest number of Japanese restaurants. Bath Beach & Murray Hill top the list neighbourhood-wise with 5 Japanese Restaurants each.

We also found out that Bronx does not have any Japanese restaurants, which might mean that there is potential in the area. It might also mean that the people residing in Bronx just do not like sushi that much. More data is needed to reach a definitive answer.

Conclusion

We started with the raw datasets & certain questions we wanted to answer. With the help of Explorative Data Analysis, we visualized & analysed the data to find the answers to these questions. We also produced a handy map to visualize our results.

Further work can be done by improving the dataset, by adding the rankings of the restaurants & then ranking them accordingly.